

REMARKS

Claims 1-32 and 34 are currently pending in this application. No claims have been amended or cancelled in this response.

In the Final Office Action mailed July 26, 2006, claims 9-17 and 19-24 were rejected under 35 U.S.C. § 103(a) over the combination of U.S. Patent No. 6,608,371 to Kurashima et al. ("Kurashima") and U.S. Patent No. 6,525,413 to Cloud et al. ("Cloud"). As set forth in detail below, the combination of Kurashima and Cloud fails to disclose or suggest all the features of these claims.

1. Claim 9 is Directed to a Microfeature Workpiece Including a Plurality of Conductive Mating Structures Having Openings and Projecting Away from a Plurality of Dies

Claim 9 is directed to a microfeature workpiece including a plurality of first dies and a plurality of first conductive mating structures on the first dies. The individual first dies have a first integrated circuit and a plurality of first pads electrically coupled to the first integrated circuit. The first conductive mating structures are positioned at least proximate to the first pads and project away from the first dies. The first conductive mating structures have openings configured to receive and interconnect with corresponding complementary second conductive mating structures on second dies.

2. Kurashima Discloses a Semiconductor Device Including a Chip Having a Plurality of Electrodes, a Plurality of Holes Aligned with the Electrodes, and an Insulating Material Disposed within the Holes

Kurashima discloses a semiconductor device including a chip 13 having a plurality of electrodes 14, a plurality of first through holes 18 aligned with corresponding electrodes 14, and an insulating material 22 disposed within the first through holes 18. The insulating material 22 has an annular configuration and defines a plurality of second through holes 24. The insulating material 22 covers the chip 13 and the electrode 14 so that the chip 13 and the electrode 14 are not exposed in the second holes 24. Conductive bumps 32 are subsequently formed in the second holes 24.

3. Cloud Discloses a Die Having a Plurality of Apertures Exposing Corresponding Bond Pads

The discussion of Cloud herein addresses the embodiment illustrated and discussed with reference to Figure 3 of Cloud, and is in no way a characterization or interpretation of the claims in Cloud. Moreover, the claims in Cloud are expressly not limited to the embodiments disclosed in the specification of Cloud. Therefore, the claims in Cloud are to be interpreted without reference to this paper.

Cloud discloses, among other things, a package including a first die 10 and a second die 20. The first die 10 includes an active surface 12, a plurality of recesses in the active surface 12, and a plurality of bond pads 14 exposed by corresponding recesses. The second die 20 includes an active surface 22, a plurality of bond pads 24, and a plurality of conductive structures 28 on corresponding bond pads 24 that project from the active surface 22. The second die 20 is attached to the first die 10 by placing the conductive structures 28 in corresponding recesses of the first die 10.

4. The Combination of Kurashima and Cloud Fails to Disclose or Suggest a Microfeature Workpiece Including a Plurality of Conductive Mating Structures Having Openings and Projecting Away From a Plurality of Dies

The combination of Kurashima and Cloud fails to disclose or suggest a microfeature workpiece including, *inter alia*, a plurality of "first conductive mating structures . . . having openings configured to receive and interconnect with corresponding complementary second conductive mating structures on second dies," as recited in claim 9. In the Office Action, the Examiner alleges that Kurashima discloses "a plurality of first conductive mating structures [24]". (Office Action, p. 2.) The Examiner's assertion, however, is incorrect. Kurashima's second through holes 24 cannot correspond to the conductive mating structures because the holes 24 are voids that do not include conductive material. Kurashima also fails to disclose the first conductive mating structures of claim 9 under different characterizations of this reference. For example, the combination of Kurashima's holes 24 and insulating material 22 cannot correspond to the conductive mating structures because the insulating material 22 is not conductive. And Kurashima's bumps 32 that are subsequently formed in the holes 24 cannot correspond to the conductive mating structures because the bumps 32 do not include openings as required by claim

9. Cloud also fails to disclose or suggest a plurality of conductive mating structures having openings. Therefore, the combination of Kurashima and Cloud fails to disclose all the features of claim 9.

Claim 9 is further patentable because a person skilled in the art would not modify Kurashima's device to include the conductive mating structures. Specifically, Kurashima teaches away from replacing the insulating material 22 with conductive material because the insulating material 22 "insulate[s] the semiconductor chip 10 reliably within the first through holes 18." (Kurashima, 7:47-48.) If Kurashima's insulating material were replaced with conductive material, Kurashima's chip would not be electrically insulated from the bumps and shorting would occur. Therefore, the combination of Kurashima and Cloud fails to disclose or suggest a plurality of conductive mating structures having openings. Accordingly, the Section 103(a) rejection of claim 9 should be withdrawn.

Claims 10-20 depend from claim 9. Accordingly, the Section 103(a) rejection of claims 10-20 should be withdrawn for at least the reasons discussed above with reference to claim 9 and for the additional features of these claims.

Independent claim 21 has, *inter alia*, features generally analogous to the features of claim 9. Accordingly, the Section 103(a) rejection of claim 21 should be withdrawn for at least the reasons discussed above with reference to claim 9 and for the additional features of claim 21.

Claims 22-24 depend from claim 21. Accordingly, the Section 103(a) rejection of claims 22-24 should be withdrawn for at least the reasons discussed above with reference to claim 21 and for the additional features of these claims.

RESPONSE UNDER 37 C.F.R. § 1.116

EXPEDITED PROCEDURE – Art Unit 2811

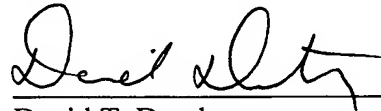
Attorney Docket No. 108298743US

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In view of the foregoing, the pending claims comply with 35 U.S.C. § 112 and are patentable over the applied art. The applicants accordingly request reconsideration of the application and a Notice of Allowance. If the Examiner has any questions or believes a telephone conference would expedite prosecution of this application, the Examiner is encouraged to contact David Dutcher at (206) 359-6465.

Respectfully submitted,

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